

CLAIMS:

1. Audio enhancement system, comprising a signal input for carrying a distorted desired signal z , a reference signal input, and a spectral processor coupled to both signal inputs for processing the distorted desired signal by means of a reference signal x acting as an estimate for the distortion of the desired signal, characterized in that the spectral processor is equipped for said processing such that a factor C' is determined, whereby said estimate is a function of C' times the spectral power of the reference signal, and the factor C' is determined as the spectral ratio between those components of the signals z and x , which are essentially stationary with time.
- 10 2. Audio enhancement system according to claim 1, characterized in that the factor C' is defined by the ratio of the minimum of the spectral powers of the distorted desired signal and the minimum of the spectral powers of the reference signal, whereby both minima are determined over a time span.
- 15 3. Audio enhancement system according to claim 2, characterized in that the time span contains at least one pause in the distorted desired signal.
4. Audio enhancement system according to claim 3, characterized in that the time span lasts at least 4 to 5 seconds.
- 20 5. Audio enhancement system according to one of the claims 1-4, characterized in that the respective spectral powers are defined by some positive function of the spectral power concerned, such as the spectral magnitude, the squared spectral magnitude, the power spectral density or the Mel-scale smoothed spectral density.
- 25 6. Audio enhancement system according to one of the claims 1-5, characterized in that the spectral processor comprises shift registers for storing values of the spectral powers.

7. Audio enhancement system according to one of the claims 1-6, characterized in that the spectral powers are smoothed spectral powers.

8. System, in particular a communication system, for example a hands-free communication device, such as a mobile telephone, a speech recognition system or a voice controlled system, which system is provided with an audio enhancement system, the audio enhancement system comprising a signal input for carrying a distorted desired signal z , a reference signal input, and a spectral processor coupled to both signal inputs for processing the distorted desired signal by means of a reference signal x acting as an estimate for the distortion of the desired signal, characterized in that the spectral processor is equipped for said processing such that a factor C' is determined, whereby said estimate is a function of C' times the spectral power of the reference signal, and the factor C' is determined as the spectral ratio between those components of the signals z and x , which are essentially stationary with time.

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9. A method for enhancing a distorted desired signal z , which signal is spectrally processed by means of a reference signal x acting as an estimate for the distortion of the desired signal, characterized in that said estimate is a function of a factor C' times the spectral power of the reference signal, and that the factor C' is determined as the spectral ratio between those components of the signals z and x , which are essentially stationary with time.

10. Signals suited for use in the audio enhancement system according to one of the claims 1-7.